

# Generalized Bacteriophage Transduction in *Serratia marcescens*

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## Abstract

© 2016, Springer Science+Business Media New York. *Serratia marcescens* is a Gram-negative bacterium from the Enterobacteriaceae family. As an opportunistic human pathogen and a causative agent of a range of nosocomial infections, *S. marcescens* represents a growing public health problem. Little is known about *S. marcescens* pathogenicity factors, in part due to the lack of well-developed functional genomic tools. Bacteriophage transduction is one of the main mechanisms of horizontal transfer of DNA in bacteria. *S. marcescens* bacteriophages previously used in transduction experiments are strain-specific, and no comprehensive studies have previously been done to evaluate the efficiency of transduction across different phages and host strains. In this study, we directly compared the ability of bacteriophages  $\Phi$ OT8 and  $\Phi$ IF3 to infect two *S. marcescens* strains, SM6 and SR41-8000. We successfully used bacteriophage  $\Phi$ OT8 to transfer a mutation in *tolC* locus between two *S. marcescens* strains.

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## Keywords

*Serratia marcescens*, TolC, Transduction, Western blotting